transmitting the side perspective view of the lead to the frame grabber;

operating a processor to send a command to the frame grabber to acquire images of pixel values from the camera;

processing the pixel values with the processor to calculate a three dimensional position of the lead;

determining a lead center location and a lead diameter in pixels and storing the lead center location and lead diameter in memory;

converting the pixel values into world locations by using pixel values and parameters determined during calibration wherein the world locations represent physical locations of the lead with respect to world coordinates defined during calibration, wherein a Z height of each lead is calculated in world coordinates in pixel values by combining a location of a center of a lead from a bottom view with a reference point of the same lead from a side perspective view;

converting the world coordinates to part values using a rotation, X placement value and Y placement value to define part coordinates for an ideal part where the part values represent physical dimensions of the lead including lead diameter, lead center location in X part and Y part coordinates and lead height in Z world coordinates; and

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comparing ideal values defined in a part file to calculate deviation values that represent a deviation of the center of the lead from its ideal location.